WE CLAIM:

1. Method for treating optical signals from a source thereof, which comprises the steps of:
   (a) directing a source of input optical signal(s) onto a movable diffractive optical element (MDOE) to generate output signals(s), each of said input signal(s) being associated with a given wavelength;
   (b) supplying one or more output station(s); and
   (c) moving said MDOE to distribute said output optical signal(s) among said output station(s).

2. The method of claim 1, wherein said MDOE is provided as a rotatable diffraction optical element (RDOE).

3. The method of claim 1, wherein said MDOE is provided as a magnet having a holographic diffraction grating attached thereto, and being magnetically coupled to a coil energizable for movement of said magnet and said diffraction grating.

4. The method of claim 2, wherein said RDOE is provided having an array of facets, each of said facets carrying diffraction grating(s).

5. The method of claim 4, wherein a selectively movable plate is provided as said MDOE, said plate bearing said array of facets, each of said facets comprising a post having an outer surface carrying said diffraction grating(s).

6. The method of claim 5, wherein said selectively movable plate is provided as a substantially flat, circular plate having an outer periphery and an axis, said posts being disposed about said periphery, said plate being rotatable about said axis.

7. The method of claim 5, wherein said diffraction gratings are provided as holographic diffraction gratings.

8. The method of claim 4, wherein a selectively rotatable plate having a surface and a periphery is provided as said RDOE, said surface carrying said array of facets which are superimposed holographic diffraction grating(s), each being angularly offset with respect to each other, which diffract said input signal(s) into a plurality of output signals.

9. The method of claim 1, wherein laser diode(s) are provided as said source.

10. The method of claim 1, wherein fiber optic cable(s) are provided as said source.

11. The method of claim 1, wherein fiber optic cable(s) are provided as said output station(s).

12. The method of claim 1, wherein optical detector(s) are provided as said output station(s).

13. The method of claim 1, further including the steps of:

(d) providing a first lens assembly for focusing said source of input signal(s) onto said MDOE; and

(e) providing a second lens assembly for focusing said distributed output optical signal(s) from said MDOE onto said output station(s).

14. The method of claim 2, further including the steps of:

(d) providing a first lens assembly for focusing said source of input signal(s) onto said RDOE; and

(e) providing a second lens assembly for focusing said distributed output optical signal(s) from said RDOE onto said output station(s).

15. The method of claim 1, further including the step of optically combining selected said output station(s) by combiner(s).

16. The method of claim 4, wherein said RDOE comprises a holographic diffraction grating of constant spacing and said RDOE has an axis, said RDOE being rotatable about said axis to a plurality of stations to create said array of facets.

17. A system for treating optical signals from a source thereof, which comprises:

(a) a source carrying input optical signal(s), each of said signal(s) being associated with a particular wavelength;

(b) a movable diffractive optical element (MDOE) positioned to intercept said input optical signal(s) for generating and distributing output optical signal(s) and;

(c) output station(s) positioned to receive said output optical signal(s) from said MDOE.

18. The system of claim 17, wherein said MDOE comprises a rotatable diffraction optical element (RDOE).

19. The system of claim 18, wherein said RDOE comprises a magnet having a holographic diffractive grating attached thereto and being magnetically coupled to a coil energizable for movement of said magnet and said diffraction grating.

20. The system of claim 18, wherein said RDOE includes an array of facets, each element of said array carrying diffraction grating(s).

21. The system of claim 19, wherein said RDOE comprises a selectively movable plate bearing an array of facets, each of said facets comprising a post having an outer surface carrying a diffraction grating.

22. The system of claim 21, wherein said selectively movable plate is a substantially flat, circular plate having an outer periphery and an axis, said posts being disposed about said periphery, said plate being rotatable about said axis.

23. The system of claim 21, wherein said diffraction grating is a holographic diffraction grating.

24. The system of claim 17, wherein said source comprises laser diode(s).

25. The system of claim 17, wherein said source comprises fiber optic cable(s).

26. The system of claim 17, wherein said output station(s) comprise optical fiber(s).

27. The system of claim 17, wherein said output station(s) comprise optical detector(s).

28. The system of claim 17, further including:

(d) a first lens assembly for focusing said source of input signal(s)onto said MDOE; and

(e) a second lens assembly for focusing said distributed output optical signal(s) from said MDOE onto said output station(s).

29. The system of claim 18, further including:

(d) a first lens assembly for focusing said source of input signal(s) onto said RDOE; and

(e) a second lens assembly for focusing said distributed output optical signal(s) from said RDOE onto said output station(s).

30. The system of claim 17, wherein selected said output station(s) are optically connected to combiner(s).

31. The system of claim 17, wherein said MDOE bears a holographic diffraction grating.

32. In a method for treating optical signals wherein optical signals provided by fiber optic cable(s) or laser diode(s) as input optical signals are distributed among output stations as output optical signals, each of said output stations comprising optical connector(s) positioned to receive said output optical signals, said optical connectors being selectively combinable to permit any combination of said output optical signals, the improvement which comprises the steps of:

(a) directing said source of input optical signals onto a movable diffractive optical element (MDOE) to generate output signals, each of said input signals being associated with a given wavelength; and

(b) moving said MDOE to distribute said output optical signals among said output stations.

33. The method of claim 32, wherein said input optical signals are multiplexed.

34. The method of claim 32, wherein said input optical signals are demultiplexed.

35. The method of claim 32, wherein said input optical signals are switched.

36. The method of claim 32, wherein said MDOE is provided as a rotatable diffractive optical element (RDOE).

37. The method of claim 36, wherein a selectively movable plate which is substantially flat and circular is provided as said RDOE, said plate having an outer periphery and an axis, said posts being disposed about said periphery, said plate being rotatable about said axis.

38. The method of claim 37, further including the steps of:

cont

(c) providing a first lens assembly for focusing said source of input signals onto said RDOE; and

(e) providing a second lens assembly for focusing said distributed output optical signals from said RDOE onto said output stations.

39. The method of claim 36, wherein said RDOE comprises a holographic diffraction grating of constant spacing and said RDOE has an axis, said RDOE being rotatable about said axis to distribute said output optical signals among said output stations.